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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,328	10/15/2004	Jan Thorsoe	2923-663	6686
6449	7590	06/13/2006		
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			EXAMINER BOATENG, ALEXIS ASIEDUA	
			ART UNIT 2838	PAPER NUMBER

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/511,328	THORSOE ET AL.	
	Examiner	Art Unit	
	Alexis Boateng	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 6, and 8 – 10, objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 4. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 3, and 10 - 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Saeki (U.S. 6,051,955).

Regarding claims 1, Saeki discloses wherein a charge control circuit for a battery pack comprising:

rechargeable battery elements (figure 3 items E₁₋₂), which are arranged in respective parallel branches of parallel circuit of battery voltage sources (figure 3 items E₁₋₂; column 4 lines 52 – 55), characterized in that each parallel branch has associated state monitoring means for monitoring the battery state of the battery voltage source represented by the parallel branch during a charging process of the battery pack (figure 3 item 2; column 5 line 65 – column 6 line 13), and in that a respective switch (figure 3 items 5 - 8), which can be controlled by the state monitoring means, is provided in each parallel branch for interrupting or

releasing the charge current flow through the parallel branch on the basis of the battery state (column 5 line 65 – column 6 line 13).

Regarding claim 2, Saeki discloses wherein the state monitoring means of a parallel branch are set to switch the controllable switch to the interrupted state when it detects a battery state “parallel branch fully charged” (column 5 line 65 – column 6 line 13).

Regarding claim 3, Saeki discloses wherein the parallel branch are formed from identical groups of series-connected battery elements which are connected in series with respective controlled switch (figure 3 items E_{1-2} ; column 4 lines 52 – 55).

Regarding claim 10, Saeki disclose wherein the state monitoring means comprise a respective microprocessor per parallel branch for the purpose of controlling the respective switch (figure 7 item 2-1 – 2-3; column 10 lines 6 – 15: item 2 is an integrated circuit, MM1309, see attached 892).

Regarding claim 11, Saeki discloses wherein the discharge control circuit for a battery pack comprising:

a rechargeable battery elements which are arranged in respective parallel branches of a parallel circuit of battery voltage sources (figure 3 items E_{1-2}), characterized in that each parallel branch, in series with the battery voltage source comprising one or more battery elements which is represented by, has a respective controllable switch having an integrated diode, or one which is connected in parallel therewith (figure 3 items 5-8), which is conductive in the

discharge current flow direction, state monitoring means being provided and set so as to switch the controllable switch from a high-resistance state to a low resistance state when a discharge current having a minimum current level flows through the diode (column 9 line 21 – column 10 line 5: controllable switches items 6 and 8 turn off when a high level signal is applied to the switches and the same switches are turned on when a low level switch is applied. This can be understood to be switching from a high resistance state to a low resistance state because, as disclosed in column 10 lines 1 – 10, high resistance elements separate the battery cells, which provide the high resistance to be switched to a low resistance.

Regarding claim 12, Saeki discloses wherein the controllable switches are transistor, in particular field-effect transistors (figure 3 items 5 – 8 disclose FETs).

Regarding claim 13, Saeki discloses wherein the state monitoring means comprise at least one microprocessor preferably at least in each case one microprocessor for each parallel branch (column 10 lines 6 – 15: an integrated circuit, MM1309 is a microprocessor, see attached 892; figure 7 item 2-1 – 2-3 are connected to each parallel battery branch).

Regarding claims 14 and 15, Saeki discloses wherein the charge control circuit as claimed in one of the claims 1-10 and the discharge control circuit as claimed in 11 – 13 combined therewith (column 5 line 65 – column 6 line 13: charging and discharging circuits are comprised within the same system).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saeki (U.S. 6,051,955) in view of Rahman (U.S. 5,990,664).

Regarding claim 4, Saeki does not disclose the invention as claimed. Rahman discloses in column 4 lines 7 – 53 wherein the temperature is monitored by a temperature sensor within the microcontroller, item 30. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Saeki system with the Rahman system so that the battery's temperature is monitored and protected from overheating.

Regarding claims 5, and 7 – 9, Saeki does not disclose the invention as claimed. Rahman discloses in column 4 lines 7 – 53 protection switches, items SW1 and SW2 are used to control the circuitry in reference to the temperature, current and time. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Saeki system with the Rahman system so that the battery's temperature is monitored and protected from overheating and overcharging.

Regarding claim 6, Saeki does not disclose the invention as claimed. Rahman discloses in column 4 lines 7 – 53 wherein the current is monitored by the

microcontroller, item 30. At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Saeki system with the Rahman system so that the battery does not become damaged from overcharge.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexis Boateng whose telephone number is (571) 272-5979. The examiner can normally be reached on 8:30 am - 6:00 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AB


KARL EASTHOM
SUPERVISORY PATENT EXAMINER